

Special Issue

Self-Assembled Plasmonic Biosensors

Message from the Guest Editors

Biosensors have demonstrated a potential impact in the prevention and detection of diseases at various stage of diagnosis. Plasmonics is the study of the interaction between electromagnetic waves and free electrons in metallic structures. Significantly, rather than opting for high-cost, long-prevailing, painful diagnostic methods, the focus towards plasmonic biosensors has provided numerous alternative advantages. Of these, the most striking features involving plasmonic biosensors include low manufacturing cost in mass production, high distinguishability rate in detection, selectivity and sensitivity based on material choice, nanoscale plasmonic enhancement, multipurpose sensing capabilities, and so on. This cross-disciplinary aspect results in excellent biosensing devices. By utilizing the light-matter interactions at the nanoscale alongside the combination of biomolecular interactions, it is possible to realize high-quality sensing devices that can tailor next-generation instruments to display excellent detection capability, reliability, selectivity, and distinguishability at an atomic precision level.

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